

## Apparatus for synthesizing analog signals in PCM.

Patent Number: EP0337458  
Publication date: 1989-10-18  
Inventor(s): OGAWA TORU; SATO SEIICHI  
Applicant(s): NAMCO LTD (JP)  
Requested Patent:  EP0337458, A3, B1  
Application Number: EP19890106631 19890413  
Priority Number(s): JP19880090575 19880413  
IPC Classification: G10H1/12 ; G10H7/00 ; G10H7/08  
EC Classification: G10H7/00  
Equivalents: CA1309775, DE68912380D, DE68912380T, ES2050176T,  JP1261909, JP2970907B2, KR9702239,  
 US5050474

### Abstract

The present invention provides an analog signal synthesizing apparatus including a waveform memory for storing a plurality of analog signals as PCM data sampled with different sampling frequencies, the amount of PCM data corresponding to plural channels being read from the waveform memory and used to synthesize the analog signals. The analog signal synthesizing apparatus includes an oversampling device for shifting the sampling frequency of said PCM data read from said waveform memory for each channel toward the side of high frequency; a summing device for summing the oversampled PCM data for the respective channel; a D/A converter for converting the summed data into an analog signal; and a low-pass filter for setting a cut-off frequency based on the sampling frequency shifted to the side of high frequency and for eliminating aliasing noises included in the PCM data from the synthesized analog signal. The elimination of the aliasing noise included in the PCM data for each channel is carried out at the common low-pass filter.

Data supplied from the esp@cenet database - 12

## Apparatus for synthesizing analog signals in PCM.

Patent Number:  EP0337458, A3, B1  
Publication date: 1989-10-18  
Inventor(s): OGAWA TORU; SATO SEIICHI  
Applicant(s): NAMCO LTD (JP)  
Requested Patent: KR9702239  
Application Number: EP19890106631 19890413  
Priority Number(s): JP19880090575 19880413  
IPC Classification: G10H1/12 ; G10H7/00 ; G10H7/08  
EC Classification: G10H7/00  
Equivalents: CA1309775, DE68912380D, DE68912380T, ES2050176T,  JP1261909, JP2970907B2,  
 US5050474

### Abstract

The present invention provides an analog signal synthesizing apparatus including a waveform memory for storing a plurality of analog signals as PCM data sampled with different sampling frequencies, the amount of PCM data corresponding to plural channels being read from the waveform memory and used to synthesize the analog signals. The analog signal synthesizing apparatus includes an oversampling device for shifting the sampling frequency of said PCM data read from said waveform memory for each channel toward the side of high frequency; a summing device for summing the oversampled PCM data for the respective channel; a D/A converter for converting the summed data into an analog signal; and a low-pass filter for setting a cut-off frequency based on the sampling frequency shifted to the side of high frequency and for eliminating aliasing noises included in the PCM data from the synthesized analog signal. The elimination of the aliasing noise included in the PCM data for each channel is carried out at the common low-pass filter.

Data supplied from the esp@cenet database - 12